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63rd ASH Annual Meeting Abstracts

POSTER ABSTRACTS

331.THROMBOSIS

The Impact of Degree of Anticoagulation on Thrombotic and Other Complications in Hospitalized COVID-19 Patients

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Abstract Introduction:

In hospitalized patients infected with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the frequency of venous thromboembolism (VTE) is increased. Retrospective studies suggested that an elevated D-dimer level is associated with increased mortality and predictive of thrombosis in these patients. In the spring of 2020, our institution developed a risk protocol for stratification of hospitalized COVID-19 patients into high, intermediate, or low risk groups, based upon history of thrombosis and D-dimer level. These patients were treated with full-dose anticoagulation, high- or standard-dose prophylaxis, respectively. The goal of this project was to determine the impact of this protocol on VTE frequency, need for intensive care unit (ICU) admission, organ failure and in-hospital mortality while assessing the frequency of hemorrhagic complications when compared to standard prophylactic anticoagulation.

Methods:

We performed a retrospective chart review of adults hospitalized between March 1 - June 1, 2020 who tested positive for SARS-CoV-2 by nasopharyngeal polymerase chain reaction (PCR). Patients were excluded if they were initially admitted to the ICU. VTE was defined as either a deep vein thrombosis (DVT) on Duplex ultrasound and/or pulmonary embolism (PE) on computed tomography (CT) angiogram. We collected demographic data, medical histories, laboratory and radiologic data on all subjects. Data were analyzed using the Chi Square test and Fisher's Exact Test to establish significant association with clinical outcomes between 3 anticoagulation regimens. Statistical significance was assessed at the $p < 0.05$ level.

Results:

Data were analyzed from 910 patients; 496 (54.6%) were male and the mean age was 57.8 ± 16.9 years. 419 (46%) subjects were Black, 151 (16.6%) Caucasian, 133 (14.6%) Latinx. Diabetes mellitus (35.3%) and hypertension (59.8%) were common in our cohort as were tobacco (12.6%) and alcohol (20.4%) use. Only 69 (7.6%) were treated with chronic anticoagulation and 216 (23.7%) were on antiplatelet agents. 123 (13.5%) required an ICU transfer and the overall mortality was 5.3%. Most patients, 809 (88.9%), received standard prophylactic anti-coagulation initially (Group A); 32 (3.5%) received high dose prophylaxis (Group B) and 69 (7.6%) received therapeutic dose anticoagulation (Group C). In the entire cohort, 46 (5.1%) developed VTE; 29 (3.6%) in Group A, 2 (6.3%) in Group B, and 15 (22%) in Group C ($p < 0.0001$). ICU admission was required for 102 (12.6%) in Group

A, 7 (21.9%) in Group B, and 14 (20.3%) in Group C ($p=0.075$). 73 ICU patients (8%) required vasopressors, including 57 (7%) in Group A, 6 (18.8%) in Group B and 10 (14.5%) in Group C ($p=0.175$). 81 ICU patients (8.9%) required mechanical ventilation, including 66 (8.2%) in Group A, 6 (18.8%) in Group B, and 9 (13%) in Group C ($p=0.513$). One patient in Group B developed an intracerebral hemorrhage. Gastrointestinal hemorrhage occurred in 11 (1.2%) of the cohort; similar rates were observed across treatment arms. The overall in-hospital mortality was 5.3% in this cohort (4.7% in Group A, 12.5% in Group B, and 8.6% in Group C, $p=0.064$).

Conclusion:

The rate of VTE in COVID-19 patients receiving any form of anti-coagulation was low. There was an increased rate of VTE, but not rates of ICU admission, mortality, mechanical ventilation nor vasopressor use in those receiving either high dose prophylaxis or therapeutic anticoagulation, suggesting an increased propensity for thrombosis either related to prior thrombotic events or reflected by increased D-dimer levels. These findings need to be confirmed in prospective studies.

Disclosures DiLorenzo: Abbott: Current holder of individual stocks in a privately-held company; Merck & Co: Current holder of individual stocks in a privately-held company; Glaxo Smith Kline: Current holder of individual stocks in a privately-held company. **Sloan:** Pharmacosmos: Membership on an entity's Board of Directors or advisory committees; Astra Zeneca: Membership on an entity's Board of Directors or advisory committees; Abbvie: Honoraria; Stemline: Honoraria. **Weinberg:** Janssen Pharmaceuticals: Other: Serve on data safety monitoring boards; Merck & Co: Current holder of individual stocks in a privately-held company. **Klings:** CSL Behring: Other: Consultant; Omeros: Other: Consultant; Bluebird Bio: Other: Consultant; Bayer: Research Funding; Novartis: Research Funding; FORM therapeutics: Research Funding.

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